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REMARKS

In response to the final Office Action mailed November 16, 2006, the Attorney for the Assignee submits the present amendments and remarks. Claims 1-10, and 41-49 were rejected by the prior Office Action. Claims 1 and 41 are amended by the present response. The present amendment and response is believed to traverse the Office Action rejections and objections, and allowance of the pending claims is kindly requested.

I. Amendments to Claims 1 and 41

Claims 1 and 41 have been amended to specify that the properties of the yarn as recited in the claims are "determined by a break load test on a tensile tester." This amendment is fully supported by the specification. The specification states that data such as elongation characteristics and creep was determined "using a break load test on a tensile tester." Specification, page 15, line 9. Because the amendment is fully supported by the specification, it does not constitute new matter.

II. Objections to the Specification

The Office Action objected to the specification for adding new matter in the form of certain properties of Type 792 yarn. Specifically, the Office Action stated that the specification only refers to the properties of breaking load (lb) and the elongation at break percentage. By the present amendment, the properties nominal decitex, filament count, luster, tenacity, and elongation @45N(%) have been deleted. The Applicant traverses the

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Office Action's statement that the breaking load (N) and hot air shrinkage @ 177 °C constitutes new matter. The specification refers to the breaking load in (lb) and to the hot air shrinkage at 350 °F. *See* specification, p. 14, ll. 19-20 ("break load of about 26.6 pounds, a hot air shrinkage at 350 °F of about 8.4%"); p. 15, ll. 4-5 ("break load of about 23.1 pounds, a hot air shrinkage at 350 °F of about 7.3%"); p. 15, ll. 7-8 ("break load of about 17.7 pounds, a hot air shrinkage at 350 °F of about 7.0%"). The breaking load as expressed in Newtons (as in the previously added table) is inherently supported by the specification, which refers to the breaking load as expressed in pounds. Similarly, the hot air shrinkage as expressed in 177 °C (as in the previously added table) is inherently supported by the specification, which refers to the hot air shrinkage as expressed in 350 °F (350 °F = 177 °C). Newtons and °C are merely alternative units to the disclosed measurements in pounds and °F. Accordingly, no new matter was added by including the breaking load (N) and hot air shrinkage @ 177 °C.

III. Rejections under 35 U.S.C. §112

First Paragraph

The Office Action rejected claims 1-10 and 41-49 under 35 U.S.C. §112, first paragraph because the specification does not provide enablement for all materials that would meet the claimed property requirements. This rejection is respectfully traversed. While it is true that the specification describes Type 792 yarn, this type is only one embodiment, and the specification describes other types of yarn that would enable one skilled in the art to make or

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use the invention. For example, page 14 of the specification describes a yarn with a 1500 denier, an elongation percentage of ranging from about 2.5% to about 3.9%, a creep of less than about 2 percent, a maximum elongation at break of about 9.8%, a break load of about 26.6 pounds, a hot air shrinkage at 350 °F of about 8.4%, a stretch percentage of about 3.9, and a shrinkage force of about 674 grams. *See generally*, specification, page 14, lines 9-21. The specification goes on to describe other types of yarns that can be used in other applications, for example yarns having deniers of 1300 or 1000. *See generally id.*, page 15, lines 1-14. In addition, the specification describes testing methods that may be used to ascertain all these properties:

This data was obtained using a break load test on a tensile tester with the yarn having a twist of 2 turns per inch. The test speed was 12 inches per minute. The gage length was 10 inches and the yarn was pre-tensioned to 30 grams. The hot air shrinkage data was collected using a hot air oven without preload with a dwell time of 30 minutes. Further, the shrinkage data was collected using a 0.05 grams per denier preload for 3 minutes.

Id., page 15, lines 9-14. In addition to the citations above, independent claims 1 and 41 have been amended to recite the break load test described in the paragraph above, which further enables one skilled in the art to make the invention without undue experimentation.

The teaching in the specification corresponds in scope to the terms used in the claims. For example, both claims 1 and 41 recite a first layer comprising strands of yarn with "a creep of less than about 2 percent after elongation." Three separate embodiments described in the specification, denier of 1500, 1300, and 1000, describe a "creep of less than about 2 percent at 20 percent of breaking load after 4.5 hours." *See id.*, page 14, line 18; page 15

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lines 2-3, 6-7. Claim 1 recites a first layer comprising strands of yarn with “an elongation characteristic within the range of about 2.5 percent to about 4.7 percent before breaking.” The specification describes yarn of one embodiment with “an elongation percentage of ranging from about 2.5% to about 3.9%”. *Id.* at page 14, line 16. Claim 41 recites a first layer comprising strands of yarn with “a denier within the range of about 1000 to 1500.” The specification describes three embodiments of yarn with this denier range on pages 14-15. Accordingly, the teaching in the specification corresponds in scope to the terms used in the claims.

As stated in *In re Marzocchi & Horton*, 169 U.S.P.Q. 367, 369 (C.C.P.A. 1971), a specification that:

contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented *must* be taken as in compliance with the enabling requirement of the first paragraph of §112 *unless* there is reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support.

Id. (emphasis in original). When a rejection is made under the first paragraph, the Office Action must “explain why it doubts the truth or accuracy of any statement...and back up assertions...with acceptable evidence or reasoning.” *Id.* at 370. *See also In re Dinh-Nguyen & Stenhagen*, 181 U.S.P.Q. 46, 47 (C.C.P.A. 1974)(“Any assertion...that the enabling disclosure is not commensurate in scope with the protection sought must be supported by evidence or reasoning substantiating the doubts so expressed.”). Here, the Office Action states that “there are no teachings or suggestion in the specification of alternative materials which could meet the claim limitations of the first layer. Office Action, ¶ 10. This statement

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is respectfully traversed. The provisions of the specification cited above describe several types of yarn that can be used in the first layer. The Office Action does not contain any evidence or reasoning as to why one skilled on the art could not follow these teachings to make and use the invention, and does not contain any reason to doubt the objective truth of the statements. Accordingly, the Office Action fails to establish that the specification is not enabling.

Second Paragraph

The Office Action further rejected claims 1-10 and 41-49 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter. The Office Action states that claims 1 and 41 recite physical properties of yarns, without setting forth structural or chemical characteristics of the yarns, citing *Ex parte Slob*, 157 U.S.P.Q. 172 (Pat. Off. Bd. of App. 1967). The Office Action rejection is respectfully traversed.

As an initial matter, claim 41 recites "strands comprising yarn having a denier within the range of about 1000 to 1500." According to the specification, denier is defined "as a measure of the fineness of filament yarns." Specification, page 14, lines 10-11. Because denier relates to the fineness, or the dimensions of the yarn, denier is a structural property. Accordingly, claim 41 does recite a structural property of the first layer of the strap.

Regardless of whether the claims actually recite a structural property of the yarn, the second paragraph of §112 does not require such a recitation. It is sufficient to satisfy the second paragraph if the claims contain physical properties, provided that the physical

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properties particularly point out and distinctly claim the invention. For example, in one case the Board reversed a rejection under the second paragraph even though the Examiner argued that the claims defined the "invention in terms of physical properties without reference to specific glass compositions." *Ex parte Potter*, App. No. 96-0004, 1999 WL 33134935, at *1 (Bd. of Pat. App. & Int. May 7, 1999) (an unpublished opinion, copy enclosed). The claim included limitations including coefficient of thermal expansion, viscosity temperature, liquidus temperature, and chemical durability. *Id.* The Board said that "the language referring to the physical properties in the rejected claims is reasonably precise and sufficiently definite." *Id.* In another case the Board reversed a similar rejection even though the Examiner argued that the claim stated "a desired result which does not state/claim what type of or how the material is designed for performing the result." *Ex parte Grabis*, App. No. 96-1619, 1996 WL 1749042, at *2 (Bd. of Pat. App. & Int. 1996) (an unpublished opinion, copy enclosed). The claim recited a material that "when bent to conform to said curved faceplate will bend without fracturing and...remains wrinkly free." The Board stated that the claims "clearly recite a physical property of the material, and the artisan would understand which materials meet this property." *Id.* See also *In re Echerd*, 471 F.2d 632, 635 (C.C.P.A. 1973) (holding that "the flexibility, wet strength and latent adhesive requirements recited in the claims must be recognized as positive qualities," because "there is nothing intrinsically wrong in defining something by what it does rather than by what it is.").

As in *Potter* and *Grabis*, claims 1 and 41 both contain physical properties that particularly point out the invention. For example, claim 1 recites an "elongation

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characteristic within the range of about 2.5 percent to about 4.7 percent before breaking.”

Claim 1 and 41 both recite “a creep of less than about 2 percent after elongation.” The physical properties are not indefinite because the specification describes a way to measure the properties with:

a break load test on a tensile tester with the yarn having a twist of 2 turns per inch. The test speed was 12 inches per minute. The gage length was 10 inches and the yarn was pre-tensioned to 30 grams. The hot air shrinkage data was collected using a hot air oven without preload with a dwell time of 30 minutes. Further, the shrinkage data was collected using a 0.05 grams per denier preload for 3 minutes.

Page 15, ll. 9-14. In addition, claims 1 and 41 have been amended to particularly point out that the properties may be determined with “a break load test on a tensile tester.” As the Board held in both *Pouer* and *Grabis*, §112 is satisfied when a claim recites physical properties, so long as the properties particularly point out the invention, because a skilled “artisan would understand which materials meet [the] properties.” *Grabis*, 1996 WL 1749042, at *2.

III. Rejections under 35 U.S.C. §102/103 to *Blackmore et al.*

The Office Action rejected claims 1, 3, 10, 41, and 43 under 35 U.S.C. §102(b) as being anticipated by, or in the alternative, under 35 U.S.C. §103(a) as unpatentable over *Blackmore et al.* (U.S. Pat. No. 5,695,373). The Office Action states that *Blackmore et al.* includes a first layer of continuous filament polyester yarns in a range from about 50 to 2000 denier, and that while *Blackmore et al.* does not recite the creep or percent elongation, the

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properties are presumed to be inherent in a polyester filament having a denier of about 50 to about 2000. The Office Action rejection is respectfully traversed for at least the following reasons.

Anticipation

Blackmore does not anticipate the claimed invention because the properties of elongation characteristic in the range of about 2.5-4.7% and creep of less than 2% as in the claimed invention are not inherent in the roofing membrane described in *Blackmore*. *Blackmore* teaches a composite comprising a first layer of a non-woven grid of continuous filament polyester yarn. See generally *Blackmore*, 4: 42-64. *Blackmore* discusses the prior art, where typically 6 to 8 weights of 3 to 5 pounds are used to apply tension to the yarns. *Id.*, 6: 35-37. The membrane described in *Blackmore*, however, only uses "2 to 3 weights of 3 to 5 points each" to tension the yarn because:

otherwise, we have found that the fabric will tend to stretch. In more detail, we prefer to maintain this tension to achieve no more than 1.5% (roughly 1/4" over 18") stretch of the yarns during the scrim making process. We have found that this is an important factor in suppressing curl during and after forming of the membrane using our composite.

Id., 6: 35-44 (underlining supplied). Furthermore, *Blackmore* states that while the "fiberglass has advantageous properties of tensile strength," the strength is only "for shorter elongation."

Id., 1: 13-15, 4: 54-56. Therefore, the claimed properties of elongation characteristic and creep are not inherent in *Blackmore*.

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Obviousness

Blackmore does not render the claimed invention obvious because it is non-analogous art, and is therefore improper for a §103 rejection, and because *Blackmore* teaches away from yarn having elongation characteristics and creep as in the claimed invention.

Blackmore relates to a preformed composite for roofing membranes. *Blackmore*, 1:9-13. Specifically, *Blackmore* relates to suppressing curl in roofing membranes comprising one or more layers. *Blackmore* teaches that when the layers are being formed into the composite, the layers can curl due to high temperatures and when one layer shrinks by a greater amount than the other. *Id.*, 2: 40-44. In contrast, the claimed invention relates to restraining freight from movement when the freight is being transported. Specification, page 1, lines 4-6. There is no motivation, teaching, or suggestion to use the roofing membrane from *Blackmore* to restrain freight as in the claimed invention. The composite for roofing in *Blackmore* is therefore non-analogous art.

The Office Action stated that in determining whether prior art is non-analogous art, "it is not necessary for the invention in the reference to intend to accomplish the purpose of the claimed invention. The invention in the reference must simply be capable of accomplishing the purpose of the claimed invention." Office Action, page 16. As discussed in more detail below, the roofing membrane in *Blackmore* is not capable of accomplishing the purpose of the claimed invention because the membrane does not possess the same elongation and creep properties as in the claimed invention. The claimed creep "allows the composite restraint straps to restrain freight without need of secondary straps to hold the

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composite restraint straps in place.” Specification, page 15, lines 16-18. Because *Blackmore* does not possess the same elongation characteristics and creep as in the claimed invention, the roofing membrane cannot accomplish the purpose of the claimed invention and is thus non-analogous art.

Moreover, *Blackmore* teaches away from yarn having elongation characteristics and creep as in the claimed invention. As discussed above, *Blackmore* distinguishes the prior art, where typically 6 to 8 weights of 3 to 5 pounds are used to apply tension to the yarns. *Blackmore*, 6: 35-37. The membrane described in *Blackmore*, however, only uses “2 to 3 weights of 3 to 5 points each” to tension the yarn because:

otherwise, we have found that the fabric will tend to stretch. In more detail, we prefer to maintain this tension to achieve no more than 1.5% (roughly 1/4” over 18”) stretch of the yarns during the scrim making process. We have found that this is an important factor in suppressing curl during and after forming of the membrane using our composite.

Id., 6: 35-44 (underlining supplied). Furthermore, *Blackmore* states that while the “fiberglass has advantageous properties of tensile strength,” the strength is only “for shorter elongation.” *Id.*, 1: 13-15, 4: 54-56. Therefore, *Blackmore* teaches away from relatively high elongation characteristics and creep of the claimed invention.

On the other hand, the claimed invention recites relatively higher elongation characteristics and creep than in *Blackmore*. Claims 1 and 41 claim elongation characteristic and creep in the range of about 2.5% to about 4.7%, and 2%, respectfully. Also, in various embodiments of the current invention, there is a break load of about 26.6 pounds, or 23.1 pounds, or 17.7 pounds, respectfully. Specification, page 14, line 19; page 15, lines 4, 7.

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Since *Blackmore* teaches away from high levels of elongation and creep, and further teaches away from high tensions, it does not render the claimed invention obvious.

The Office Action also rejected claims 3, 10, and 43 in view of *Blackmore*. Claims 3, 10, and 43 are ultimately dependent from claims 1 and 41 for which arguments have been provided above. If the underlying independent claims are allowable over the cited reference, then the corresponding dependent claims should also be allowable.

IV. Rejections under 35 U.S.C. §103 to *Bullock*

The Office Action rejected claims 1-3, 5-10, 41-43, and 45-49 under 35 U.S.C. §103(a) as being unpatentable to *Bullock* (U.S. Pat. No. 6,089,802). The Office Action states that the adhesive-coated polyester strip, preferably a film of spunbonded olefin, is analogous to the claimed second layer. The Office Action states that the strip may be inlaid with polyester or polyethylene fiber reinforcement strands, which are analogous to the claimed first layer. The Office Action rejections are respectfully traversed for at least the following reasons.

Claim 1

Claim 1 requires a "first layer comprising a plurality of strands comprising yarn having an elongation characteristic within the range of about 2.5 percent to about 4.7 percent before breaking and a creep of less than about 2 percent after elongation." The specified creep and percent elongation of the claimed invention has several advantages over the prior art. Specifically, the "creep allows the composite restraint straps 22 to restrain freight

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without need of secondary straps to hold the composite restraint straps 22 in place.”

Specification, page 15, ll. 16-18. Furthermore,

many straps are known in the art that require pieces of tape for holding a strap in position in the event that the strap over-elongates and slack is formed in the strap because its material does not recover well. Without these pieces of tape, the strap falls out of position. In contrast, the specified recoverability of this invention, as shown by the small amount of creep, eliminates this need for tape to hold the strap in position.

Id., page 15, l. 21 through page 16, l. 4. *Bullock* does not describe or suggest a strap having particular percent elongation or creep. All that *Bullock* discloses is that the restraint system is “resistant to axial lengthening,” *Bullock*, 3:60, without discussing any mechanical properties. Also, the advantages that are provided by the percent elongation and creep of the claimed invention are not described in *Bullock*.

Accordingly, in contrast to the current invention the restraint system of *Bullock* does not have the advantages of a specific amount of percent elongation and creep.

The Office Action further rejected claims 2, 3, and 5-10 under 35 U.S.C. §103(a) as being unpatentable under *Bullock*. These claims are ultimately dependent from claim 1, for which arguments of patentability have been provided above. If the underlying independent claim is allowable over *Bullock*, then the corresponding dependent claims should also be allowable.

Claim 41

Claim 41 requires “a first layer comprising a plurality of strands comprising yarn having a denier within the range of about 1000 to 1500 and a creep of less than about 2

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percent after elongation.” The Office Action further states that regarding the denier values in claim 41, absent a showing of unexpected results, it would have been obvious for one of ordinary skill in the art to determine, without undue experimentation, the optimal polyester reinforcing strands. Office Action, ¶20. The rejection is traversed for at least the following reasons.

To the extent that claim 41 includes the element of “a denier within the range of about 1000 to 1500,” *Bullock* does not disclose or suggest such a denier value, or any mechanical properties of the reinforcement strands. Yarns with different denier values provide different mechanical properties. Specifically, “yarn having a denier of 1500 has an elongation percentage of ranging from about 2.5% to about 3.9%,” Specification, page 14, ll. 15-16, and “yarn having a denier of 1300 has a creep of less than about 2 percent,” *id.* page 15, ll. 2-3, and finally “yarn having a denier of 1000 has a creep of less than about 2 percent.” *Id.*, page 15, ll. 5-6. The applicants obtained this data through mechanical testing. Specifically, the yarn was tested:

using a break load test on a tensile tester with the yarn having a twist of 2 turns per inch. The test speed was 12 inches per minute. The gage length was 10 inches and the yarn was pre-tensioned to 30 grams. The hot air shrinkage data was collected using a hot air oven without preload with a dwell time of 30 minutes. Further, the shrinkage data was collected using a 0.05 grams per denier preload for 3 minutes.

Page 15, ll. 9-14. The Office Action states that “it would have been obvious for one of ordinary skill in the art to determine, without undue experimentation, the optimal polyester reinforcing strands.” Office Action, ¶ 20. It is not predictable what would happen if the

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denier value of the strands in *Bullock* had the denier value range of the claimed invention. The outcome of so modifying the restraint system in *Bullock* is purely speculative. Applicants respectfully submit that one of ordinary skill in the art could not have determined, without undue experimentation, the optimal polyester reinforcing strands.

To the extent that claim 41 includes the element of "creep of less than about 2 percent after elongation," arguments of patentability have been provided above with respect to claim 1.

The Office Action further rejected claims 42-43 and 45-49 under 35 U.S.C. §103(a) as being unpatentable under *Bullock*. These claims are ultimately dependent from independent claim 41, for which arguments of patentability have been provided above. If the underlying independent claim is allowable over *Bullock*, then the corresponding dependent claims should also be allowable.

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CONCLUSION

Claims 1-10 and 41-49 are pending in the present application, and claim(s) 1 and 41 are amended by the present response. For at least the above reasons, Applicants respectfully requests that a timely Notice of Allowance be issued in this case. If there remain any additional issues to be addressed, the Examiner is urged to contact the undersigned attorney at 404.815.6061.

Respectfully submitted,



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